



2005 Arizona and United States West Nile Virus Update

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Vector-Borne & Zoonotic Diseases Program

Office of Infectious Diseases

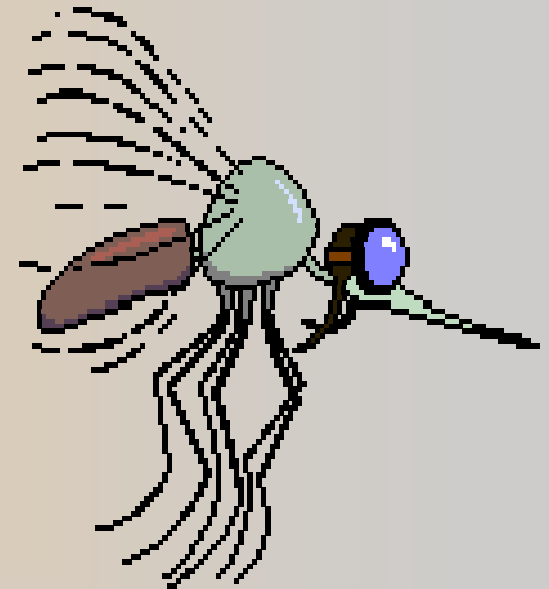
Arizona Department of Health Services



Terminology, Pt. I

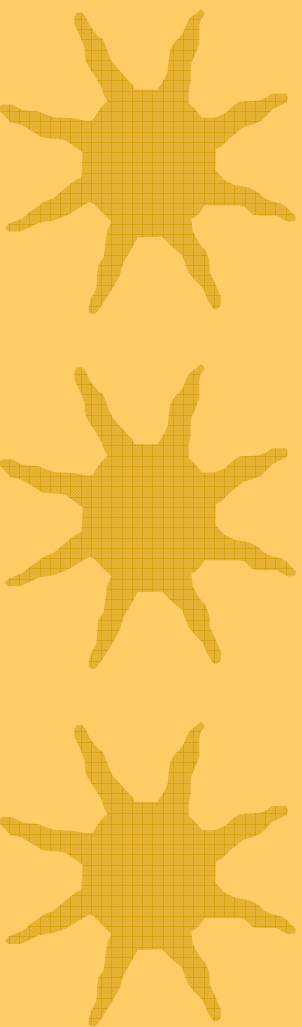
Mosquito Sample

- ✓ collected *in the field*
- ✓ from a single site
- ✓ often contains more than one species
- ✓ may also contain both females and males





Sample = “collected in the field”

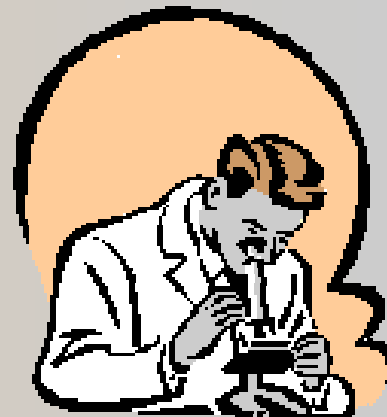




Terminology, Pt. II

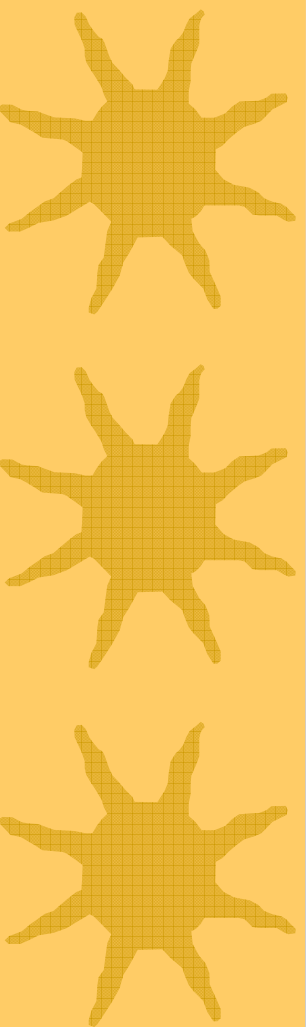
Mosquito Pools

- ✓ created *in the lab* from mosquito samples once species and gender id is completed
- ✓ contain 1-50 mosquitoes of the same species and sex, and from the same site
- ✓ an *aggregate* or *group* of similar things for a common use, i.e., mosquitoes for arbovirus testing
- ✓ does not refer to a green swimming pool





Pool = “Created in the Lab out of samples”





Total No. Pools WNV+, 2005

✓ 350

» 277 PCR positive

» 91 RAMP positive

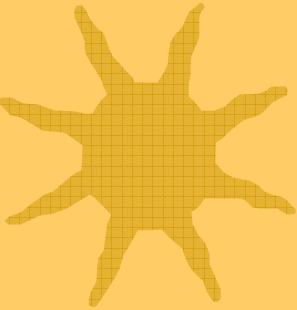
368?

☞ 18 positive by both techniques

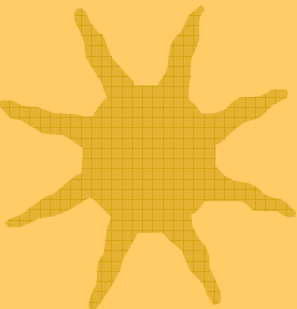
✂ So, $368 - 18_{(\text{RAMP}+)} = 350$



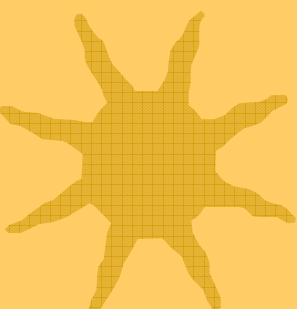
No. Mosquito Pools Tested by PCR by ASL, 2005



✓ 5,420!!!!



✓ 271 (5.0%) WNV+



✓ 2 (0.04%) SLE+



No. Mosquito Pools Tested by PCR by U.S. Army, 2005

Ft. Huachuca & Yuma Proving Ground

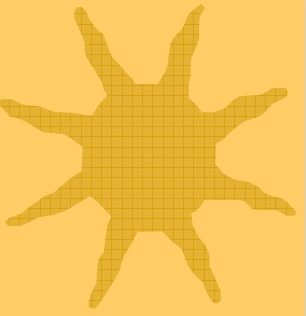
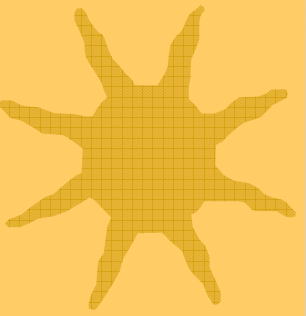
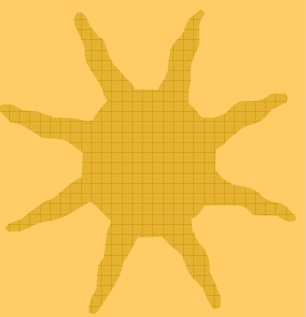
✓ 785



✓ 6 (0.8%) WNV +



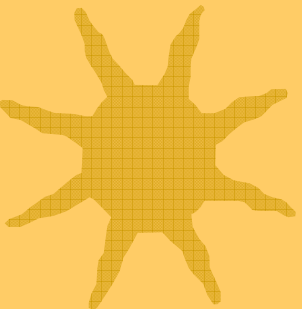
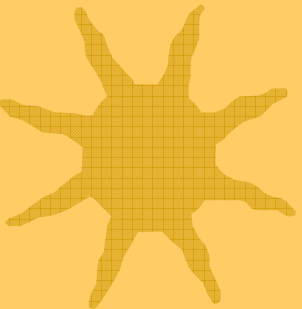
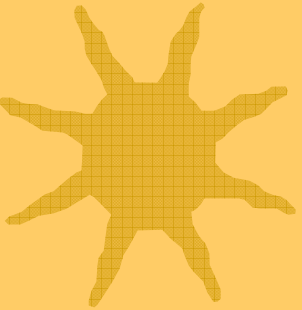
No. RAMP Tested Mosquito Pools, 2005



<u>Agency</u>	<u>No. Tested/No. WNV+</u>
MCVC	1,398/73
YCPAD	692/17
YCHD	81/0
ADHS	118/1
Total	2,289/91



No. of WNV Positive Mosquito Pools in Arizona, 2005

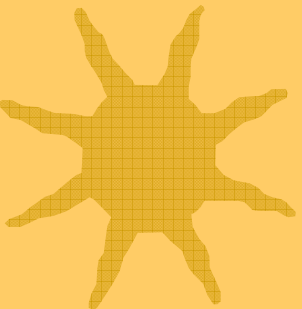
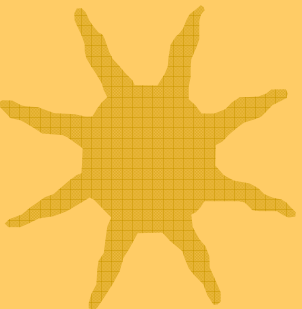
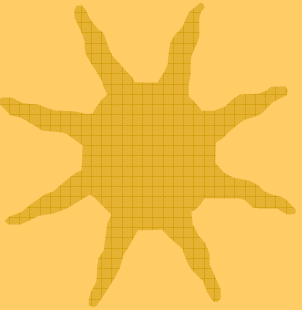


Apache	10
Cochise	9
Coconino	1
Gila	5
Graham	9
Greenlee	0
La Paz	12
Maricopa	122





WNV Positive Mosquito Pools, Arizona 2005, Pt. II

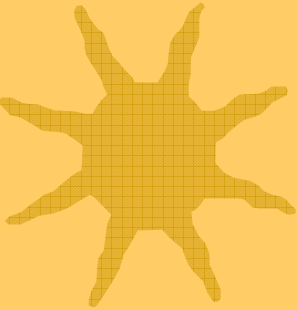


Mohave	10
Navajo	2
Pima	20
Pinal	36
Santa Cruz	0
Yavapai	86
Yuma	28
Total	350





WNV+ Birds, Arizona 2005, Pt. I



Apache 0/13

Cochise 0/44

Coconino 1/78 (1.3%)

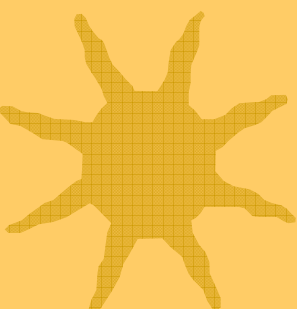
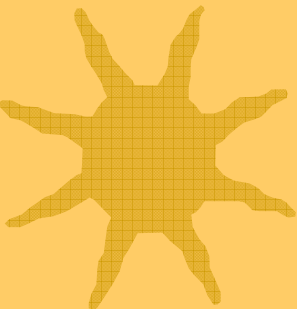
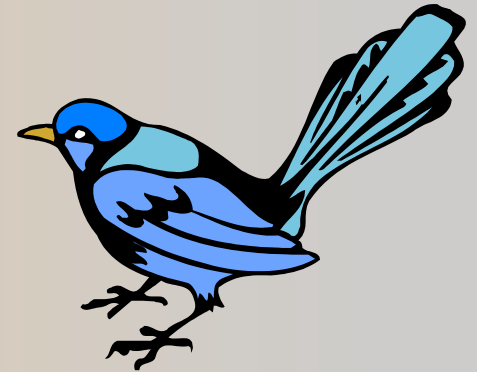
Gila 1/26 (3.9%)

Graham 0/17

Greenlee 0/3

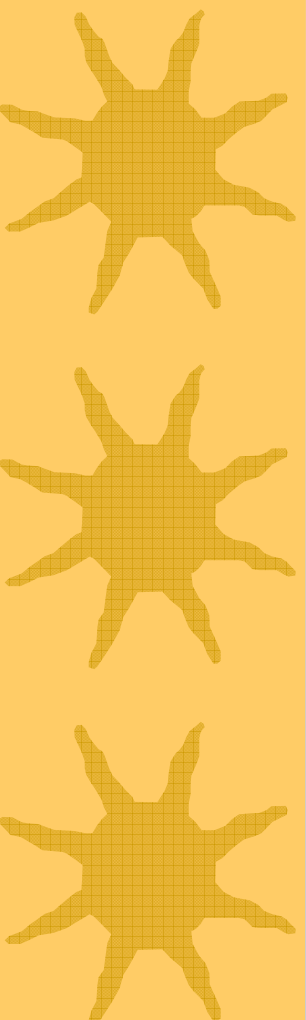
La Paz 0/17

Maricopa 3/320 (0.9%)





WNV+ Birds, Arizona 2005, Pt. II



Mohave	0/20
Navajo	1/43 (2.3%)
Pima	8/410 (2.0%)
Pinal	0/26
Santa Cruz	0/6
Yavapai	5/114 (4.4%)
Yuma	0/13

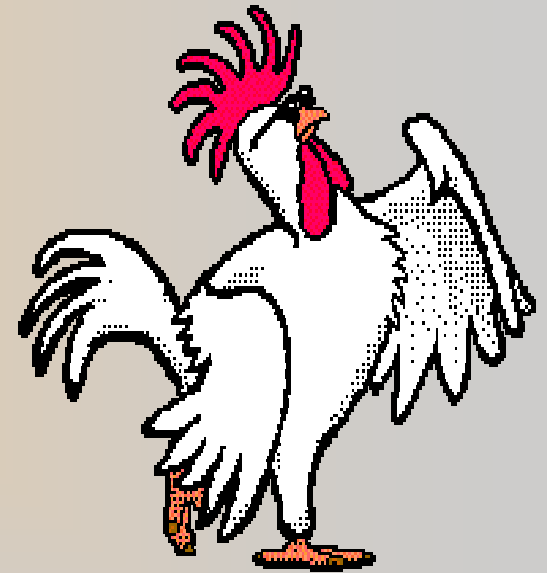


Total	19/1,150 (1.7%)
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WNV+ Sentinel Chicken Flocks, Arizona 2005

Coconino	2
Maricopa	31
Pima	1
Santa Cruz	1
Yuma	9
<hr/>	
Total	44





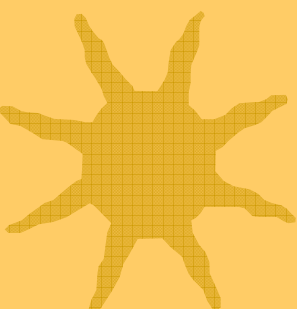
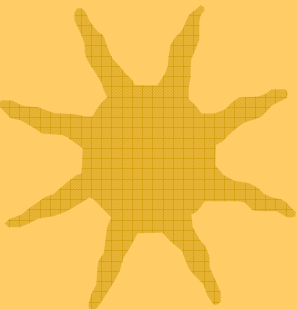
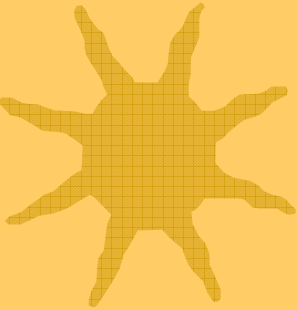
WEE+ Sentinel Chicken Flocks, Arizona 2005

Maricopa	5
Yuma	15
<hr/>	
Total	20





WNV+ Horses, Arizona 2005, Pt. I



Apache	2/28
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Cochise	0/13
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Coconino	0/23
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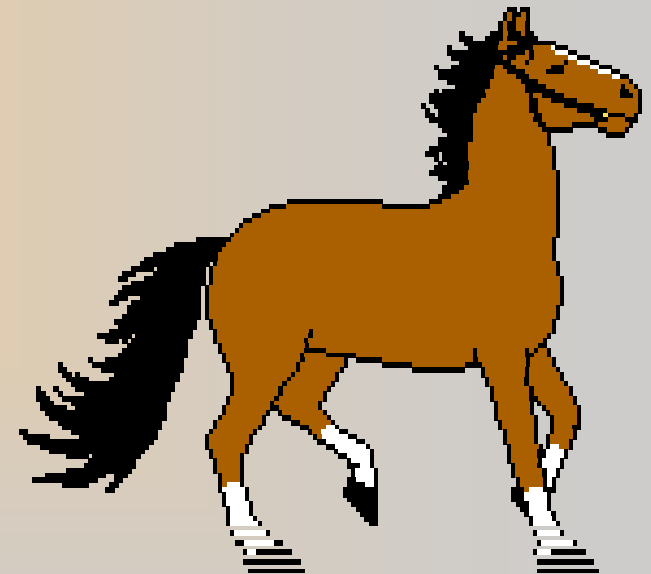
Gila	0/5
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Graham	0/9
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Greenlee	0/0
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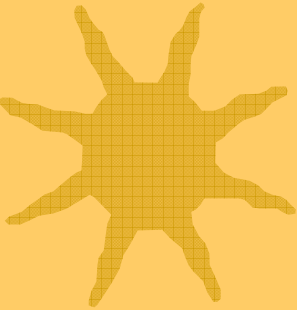
La Paz	0/3
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Maricopa	17/228 (7.5%)
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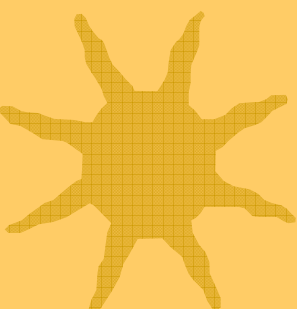
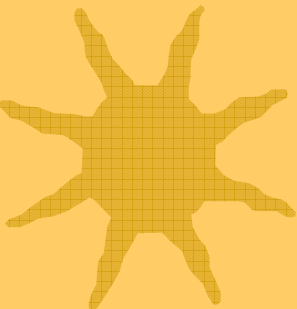




WNV+ Horses, Arizona 2005, Pt. II



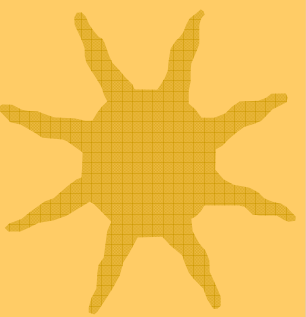
Mohave	0/7
Navajo	2/20 (10.0%)
Pima	7/87 (8.1%)
Pinal	7/30 (23.3%)
Santa Cruz	0/9
Yavapai	8/46 (17.4%)
Yuma	0/3



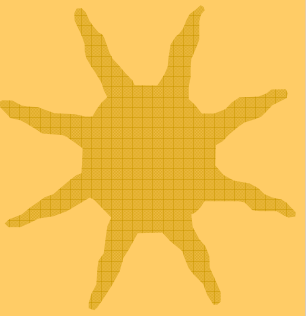
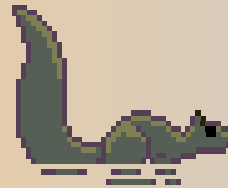
Total	43/511 (8.4%)
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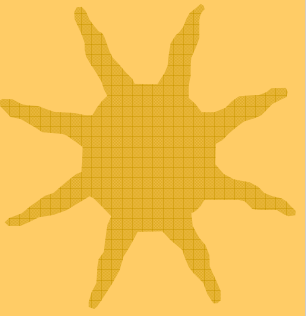
WNV+ Misc. Animals, Arizona 2005



✓ 5 Tree Squirrels



✓ 2 Alpacas

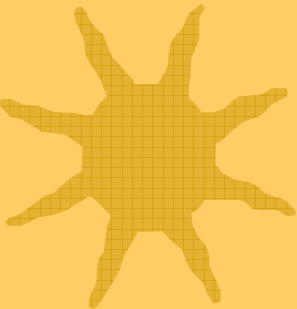
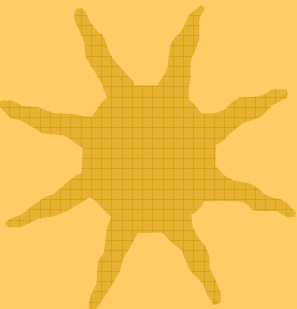
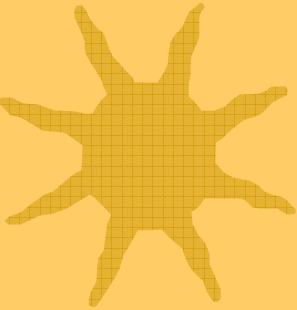


✓ 1 Llamas





WNV+ Human Cases, Arizona 2005, Pt. 1

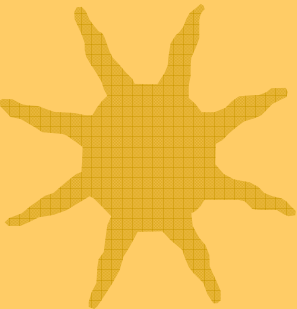
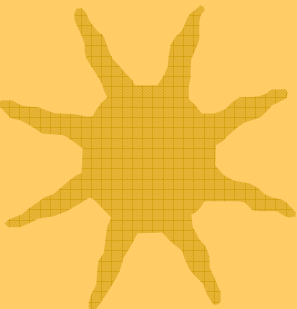
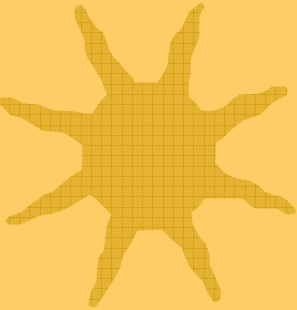


Apache	1
Cochise	1
Coconino	0
Gila	0
Graham	2
Greenlee	0
La Paz	1
Maricopa	78(3)





WNV+ Human Cases, Arizona 2005, Pt. II

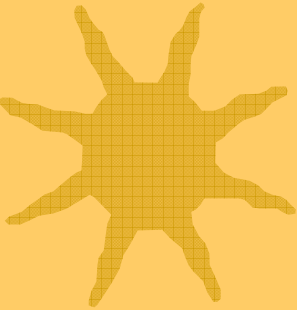


Mohave	2
Navajo	0
Pima	17(1)
Pinal	7
Santa Cruz	0
Yavapai	1
Yuma	1
<hr/>	
Total	111(4)



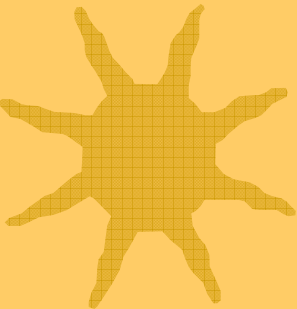
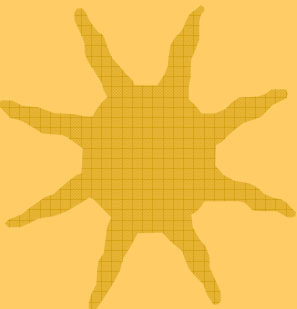


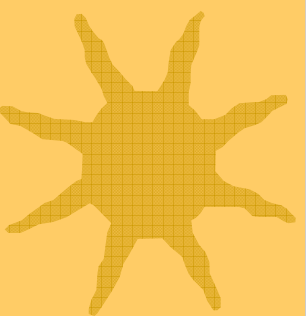
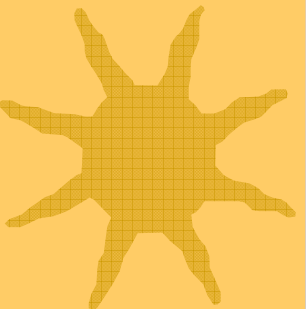
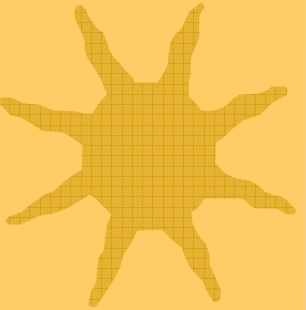
WNV+ Blood Donors, Arizona 2005



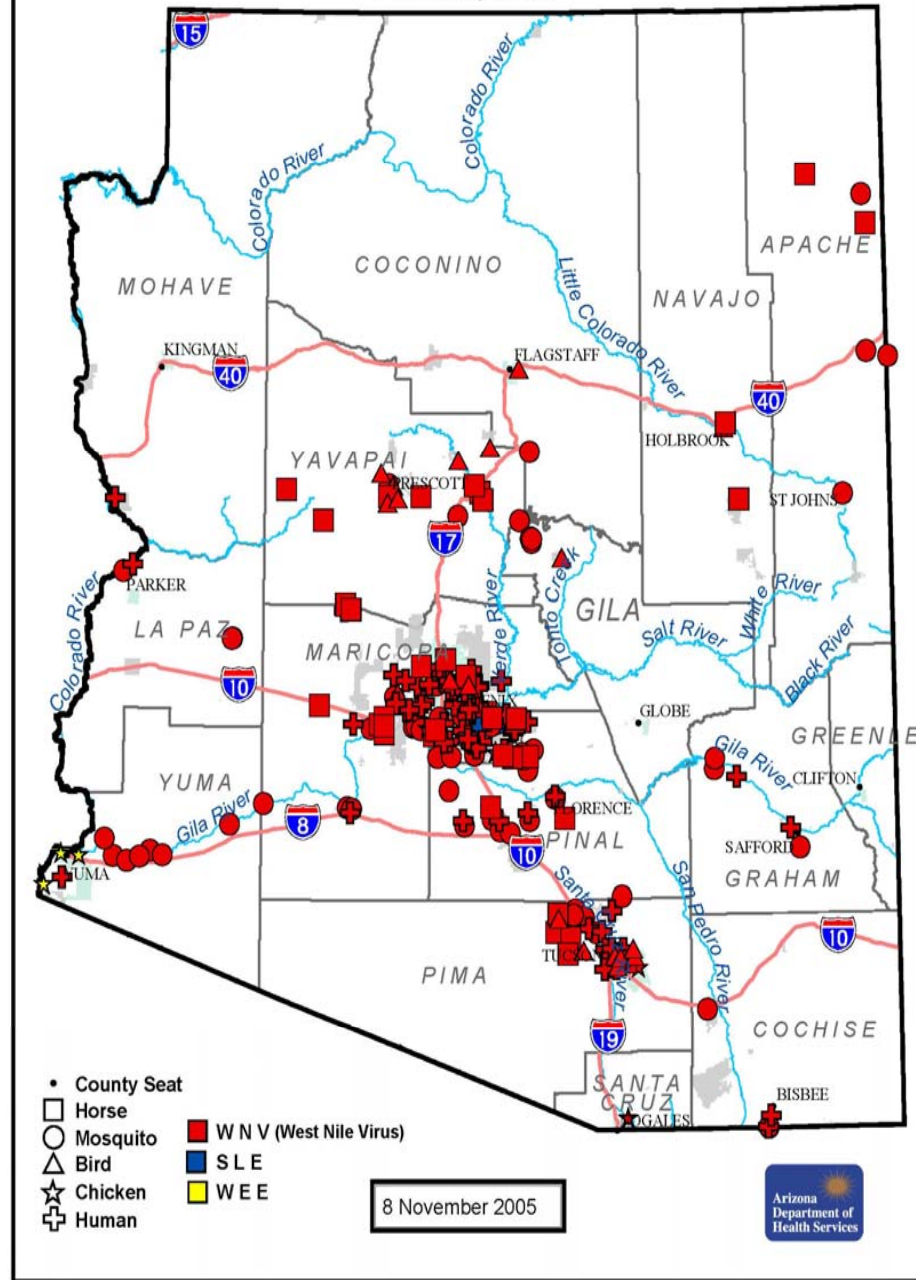
Graham	1
Maricopa	14
Pima	4
Pinal	1

Total	20
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Map of Mosquito-Borne Disease Activity, Arizona, 2005





WNV 2005

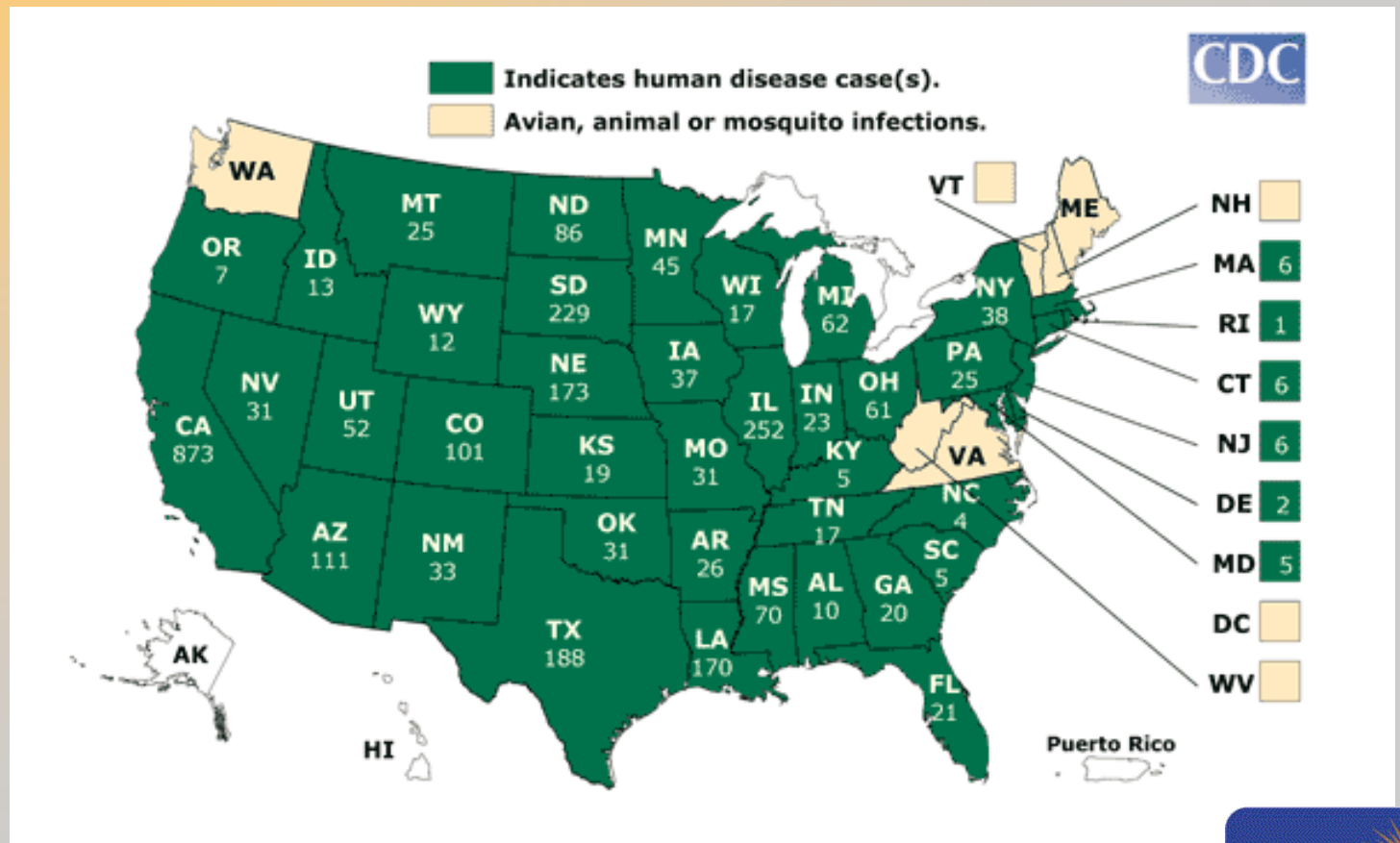
United States Data (tentative)



http://www.cdc.gov/ncidod/dvbid/westnile/conf/February_2006.htm



U.S. WNV Activity 2005 Map



Morale of the story....tain't over yet folks!



2005 United States WNV Statistics

- ☛ **2,949 reported cases from 42 states with 116 reported deaths**
 - WN Neuro-Invasive Disease = 1,288
 - WN Fever = 1,661
- ☛ **1999-2005: 19,655 WNV cases (46 states)**
 - WN Neuro-Invasive Disease = 8,390
 - WN Fever = 11,265
 - 782 (4%) deaths



U.S. Human Cases from Other Arboviruses, 2005

- ✓ **Cal (LAC): 74 cases in 11 states**
 - ✓ **EEE: 21 cases in 7 states**
 - ✓ **SLE: 11 cases in 3 states**
 - ✓ **WEE: no human cases**
-
- ✓ **DEN: 61 cases in 11 states**
 - ✓ **POW: 1 case in 1 state**



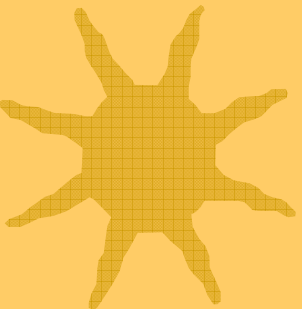
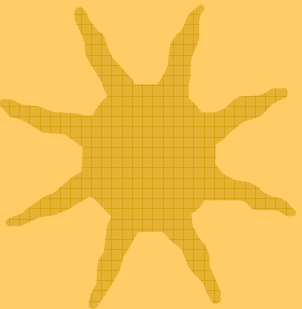
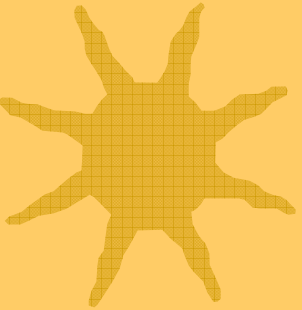
2005 WNV Bird Data

- ✓ Literally thousands & thousands reported (100,000+: *the data still a comin'*)
- ✓ 8,653 tested
- ✓ 5,344 WNV+ (62%) from 45 states
- ✓ 4,355+ Corvids (81%), 989+ (19%) other species



2005 WNV Veterinary Data

- ✓ **1,139 WNV+ horses**
(mostly from western states)
- ✓ **6 squirrels**
- ✓ **7 canines**
- ✓ **10 misc. species**





2005 WNV U.S. Mosquito Data

- ✓ 2.3 million mosquitoes tested
- ✓ 11,485 pools WNV+
- ✓ 39 species (**Culex!!**) positive from 42 states
- ✓ Earliest reported positive = January 21st (East Baton Rouge Parish, LA)
- ✓ Latest reported positive = November 30th (Los Angeles County, CA)

However.....



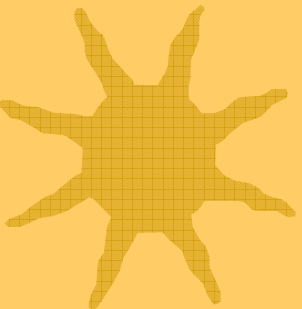
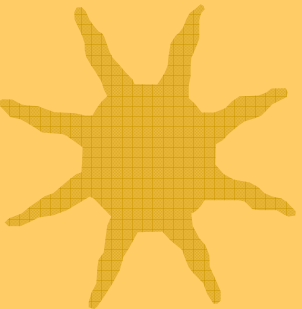
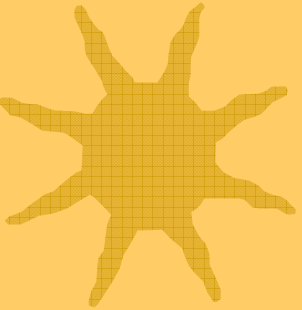
A Scary National Trend

Decreasing Novelty of WNV

+

Increasing Complacency

Calls for Dismantling Current
Mosquito Control Infrastructures





An Even Scariier Reality

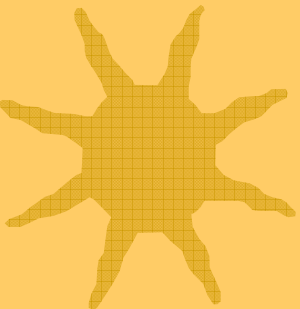
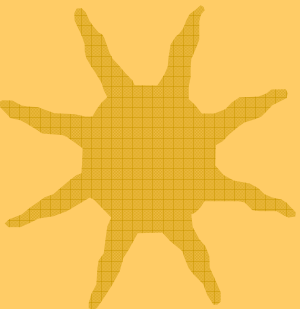
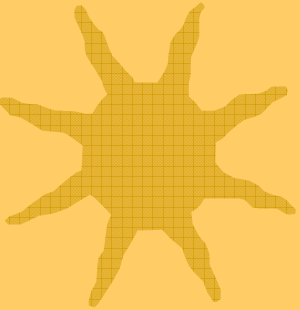
☹️ WNV not going away

💀 “Something evil this way
comes”

Our cast of
characters...Dengue, Rift
Valley Fever, Japanese
Encephalitis, Usutu,

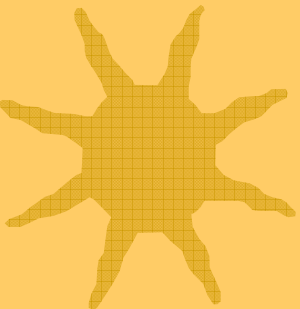
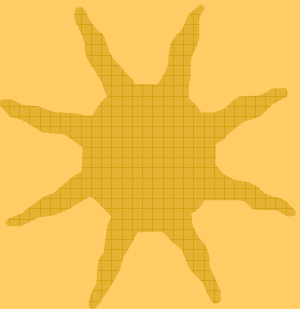
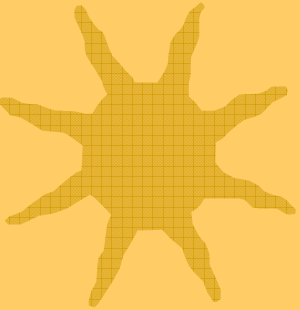


Remember, diligence, not complacency, is the key to mosquito control





CDC Website for 2005 WNV Conference Presentations



**[http://www.cdc.gov/ncidod/dvbid/westnile/
conf/February_2006.htm](http://www.cdc.gov/ncidod/dvbid/westnile/conf/February_2006.htm)**